

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
Service Rules for Advanced Wireless Services)	
in the 2155-2175 MHz Band)	WT Docket No. 07-195
)	

**Reply Comments of the Advanced Communications Law & Policy Institute
at New York Law School**

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I. INTRODUCTION

The Advanced Communications Law & Policy Institute (ACLP) at New York Law School¹ respectfully submits these comments in response to the *Further Notice of Proposed Rulemaking* in the above-captioned proceeding.² In short, the ACLP urges the Federal Communications Commission (“FCC” or “Commission”) to abandon its proposed rules for the AWS-3 swath of spectrum, especially the requirement that the winning bidder use a portion of the airwaves to provide “free” broadband service to users across the country.

The following comments will make three interrelated points. *First*, a brief review of the evolution of FCC spectrum allocation policy shows that the Commission has explicitly rejected spectrum encumbrances in favor of an approach that provides winning bidders with relatively wide latitude to decide how best to use their slice of the airwaves. Such an approach, which defers to the expertise of network owners and engineers, has facilitated enormous technological innovation and competition among service providers. As a result, consumers are reaping the rewards of a marketplace operating under the certainty of a deregulatory, hands-off approach.

¹ The ACLP is an interdisciplinary public policy program of New York Law School that focuses on identifying and analyzing key regulatory and legal issues facing the advanced communications marketplace.

² *In the Matter of Service Rules for Advanced Wireless Services*, WT Docket Nos. 07-195 and 04-356, Further Notice of Proposed Rulemaking, FCC 08-158 (rel. June 20, 2008) (“AWS FNPRM”).

The proposed AWS-3 rules, however, represent a clear departure from this established practice and, if adopted, would likely harm consumers.

Second, the “free” broadband requirement articulated by the FCC in its proposed rules³ is unnecessary in light of the high level of competition observed across the advanced communications market. In particular, both the broadband and wireless sectors are robustly competitive and are providing consumers with choice, innovative technologies, and consistently lower prices. The “free” broadband rule assumes a market failure – i.e. a discernible gap between consumer demand for broadband services (especially wireless broadband services) and supply by service providers. Yet, as these comments will make clear, the facts prove otherwise.

Third, the proposed encumbrances on spectrum in the AWS-3 band are harmful to the market and to consumers for a number of reasons. Encumbrances (i) decrease the value of spectrum by limiting the appeal of that portion of the airwaves to bidders willing to accept and comply with the FCC’s rigid set of rules, (ii) slow innovation, and thus decrease consumer welfare, by requiring the winning bidder to conform its business model and network infrastructure to fit within the rules’ strictures, and, in this particular case, (iii) endorse a business model that has consistently failed and (iv) raise the possibility of harmful interference for licensees operating in adjacent bands of spectrum. Regarding point (iii), it will be seen that government intervention into the broadband market, mostly via municipal Wi-Fi ventures, has yet to prove viable for service providers or useful to consumers.

While the FCC’s goal of promoting the “deployment and ubiquitous availability of broadband services across the country”⁴ is undoubtedly noble, the Commission must also recognize that the advanced communication market is thriving. Organic market forces are

³ *Id.* at para. 3.

⁴ *Id.* at para. 1.

driving the market and have made firms ever more responsive to consumer demand. As these comments will make clear, current conditions in the broadband and wireless markets strongly caution against the adoption of the proposed rules for the AWS-3 band.

II. THE PROPOSED RULES REPRESENT A CLEAR DEPARTURE FROM ESTABLISHED FCC SPECTRUM POLICY AND, IF ADOPTED, WOULD LIKELY HARM CONSUMERS

The present success of the wireless industry has been fostered by the FCC's careful approach to crafting policies and regulations that seek to guide rather than control the marketplace. As this section will detail, the evolution of FCC spectrum allocation policy over the last twenty-five years has largely paralleled the explosion in consumer demand for ever more innovative wireless devices and services.⁵ The resulting policies have usually been reflective of the market rather than anticipatory regulations that try to predict consumer demand or force technological innovation. As discussed below, the overall trend in policy making at the FCC vis-à-vis the wireless market has been towards less regulation, not more. This approach has spurred competition, fostered innovation, and provided consumers with consistent welfare gains. The proposed AWS-3 rules contradict this precedent and, if adopted, risk reversing many of the consumer welfare gains of the last two decades.

A. From Command-and-Control to Auctions: The FCC Reacts to a Surge in Consumer Demand by Freeing Spectrum

The FCC's initial command-and-control approach to spectrum allocation for wireless telephony stemmed from a desire to protect other technologies that relied on spectrum (e.g., television) from interference and to foster a nascent market.⁶ However, as transmission

⁵ Today there are over 255 million wireless subscribers across the U.S., and the wireless industry boasts an 84 percent penetration rate. See CTIA – The Wireless Association, *Wireless Quick Facts*, available at <http://www.ctia.org/advocacy/research/index.cfm/AID/10323> (“Wireless Quick Facts”).

⁶ Scarcity was another rationale. See, e.g., *NBC v. U.S.*, 319 U.S. 190, 213 (1943) (stating that “[there are] certain basic facts about radio as a means of communication – its facilities are limited, they are not available to all who may

technology progressed, which allowed for more efficient use of spectrum and less interference, and as mobile services evolved, it became clear that command-and-control was stifling network investment and limiting innovation by reducing incentives to do either if spectrum was encumbered.⁷ This, along with rising consumer demand in the mid-1980s,⁸ forced the FCC to reassess its spectrum policy.

Recognizing the inherent flaws of command-and-control and the limitations it placed on the market, the FCC began to implement more flexible spectrum use policies in the late 1980s.⁹ For example, in 1988 the FCC allowed licensees to employ alternative cellular technologies, a move intended to further spur growth in the cellular market and that eventually led to the development of new digital transmission technologies.¹⁰ Similarly, when in the 1990s consumer demand began to boom,¹¹ the FCC sought to bolster competition by auctioning off an additional 120 MHz of spectrum of “personal communications services” (PCS) in local and regional blocks.¹² In addition, the FCC adopted a more flexible spectrum use approach by allowing PCS

wish to use them...[r]egulation of radio was therefore as vital to its development as traffic control was to the development of the automobile.”).

⁷ See *Unlicensed Operation in the TV Broadcast Bands*, 21 F.C.C.R. 12266, 12276 (2006).

⁸ The number of wireless consumers nearly tripled between 1984 and 1985 and doubled between 1985 and 1986. See *In re Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, Eleventh Report*, FCC 06-142, Table 1 (2006) (“11th CMRS Report”).

⁹ The FCC later admitted that when it was first forging policies for the wireless market, “no one predicted that the service would be as popular” as it quickly became. See *In re Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, First Report*, FCC 95-317, ¶ 3 (1995) (“1st CMRS Report”).

¹⁰ Thomas Hazlett, *The Wireless Craze, The Unlimited Bandwidth Myth, The Spectrum Auction Faux Pas, and the Punchline Ronald Coase’s “Big Joke”: An Essay on Airwave Allocation Policy*, 14 Harv. J. of Law & Tech. 335, 485 (2001) (“Only in 1988, after licensees had built their big-city systems (where capacity was stretched) did the FCC allow digital telephones, in one of the great blunders in the history of telecommunications.”) (“*Wireless Craze*”); see also, *Liberalization of Tech. & Auxiliary Offerings in Domestic Pub. Cellular Radio Telecomm. Servs.*, 3 F.C.C.R. 7033 (1988).

¹¹ At the end of 1990, there were over 5 million subscribers, a number that would double by 1992 and approach 100 million by the turn of the century. 11th CMRS Report at Table 1.

¹² *Wireless Craze*.

licensees to employ “any mobile communications service,” not just the analog technology.¹³ This spurred further competition within the market and fostered creative approaches like the one taken by Nextel, which created a competitive network made up of spectrum originally limited to “specialized mobile radio” (SMR) licenses and intended for use only as a private dispatch service. By seeking various FCC waivers, Nextel was able to transform the SMR spectrum into a competitive wireless network without a formal rule making proceeding by the FCC.¹⁴

The FCC’s adoption of more flexible spectrum policies in the late 1980s and 1990s provided licenses with more latitude to make business decisions regarding its spectrum. Moreover, this approach created incentives for carriers to make more efficient and highly-valued choices in spectrum use.¹⁵ Yet despite the healthy growth of the wireless market and the proliferation of forward-looking policies by the FCC that fostered continued growth and innovation, the Commission would go on to further liberalize its spectrum allocation policy as consumer demand exploded.

B. The FCC Has Traditionally Freed Spectrum, Not Encumbered it, in Response to Competition, Innovation, and Convergence

By the dawn of the twenty-first century, the wireless market was developing more quickly than at any point in its brief history. The number of minutes used per month by consumers skyrocketed between 1999 and 2002, rising from 185 to 427.¹⁶ Upwards of five percent of wireless consumers had completely “cut the cord” by 2000, relying solely on their

¹³ STUART MINOR BENJAMIN, ET AL., TELECOMMUNICATIONS LAW AND POLICY 77 (2nd ed. 2006).

¹⁴ JONATHAN NUECHTERLEIN & PHIL WEISER, DIGITAL CROSSROADS 244 (MIT 2006).

¹⁵ *Spectrum Policy Task Force Report*, ET Docket No. 02-135, 16 (Nov. 2002) (“*Spectrum Policy Task Force Report*”).

¹⁶ 11th CMRS Report at Table 10.

mobile devices for telephone service.¹⁷ By 2002 the Yankee Group found that consumers were using more minutes on their cell phones than on their landline phones for the first time ever.¹⁸ With an increase in consumer demand for more minutes and more data-rich mobile services like text messaging and email, along with a concomitant rise in competition among carriers and commitments to upgrade networks to 3G, many carriers began to demand additional spectrum to bolster networks and facilitate the rollout of these services.¹⁹ The FCC responded by making more unencumbered spectrum available for auction in 2000 and 2001²⁰ and by reexamining its spectrum allocation policies. To this end, beginning in 2002 with a fundamental review of its spectrum policy, the FCC dedicated itself to ensuring that its approach to wireless policy making evolved parallel to the market.²¹

Between 2002 and 2006, the FCC developed and implemented wireless policies that were market-oriented and responsive to consumer demand. The new framework included a more flexible approach to spectrum allocation, one that created incentives for incumbent market participants to use their spectrum more efficiently, thus freeing additional spectrum and allowing new firms to enter the market.²² The results of these policies were impressive. Between December 2000 and December 2005, the wireless industry added almost 100 million new

¹⁷ See *In re Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, Sixth Report*, FCC 01-192, 32 (2001) (“6th CMRS Report”).

¹⁸ See Yankee Group Report, *Personal Wireless Calling Surpasses Wireline Calling: A Wireless Substitution Update*, 4, August 2005.

¹⁹ 6th CMRS Report at 50-51.

²⁰ *Id.* at 51 (referring to rulemaking proceedings for five different spectrum bands for advanced mobile services: 1710-1755 MHz, 1755-1850 MHz, 2110-2155 MHz, 2160-2165 MHz, and 2500-2690 MHz).

²¹ In 2002, then-FCC Chairman Michael Powell established a Spectrum Policy Task Force to undertake an evaluation of its existing spectrum practices. The primary responsibility of the Task Force was to recommend more market-oriented policies that would encourage investment, promote innovation, and provide the marketplace with regulatory certainty. *Spectrum Policy Task Force Report* at 1.

²² *Id.* at 15.

customers, equal to the amount of users added from the birth of the wireless market to 2000.²³ Over this same period, carriers dramatically increased annual network investments from \$18 billion in 2000 to \$25 billion in 2005.²⁴ Coverage became more ubiquitous as the number of cell sites increased to 184,000 from 104,000, and wireless penetration grew to 69 percent.²⁵

Consumer demand for advanced wireless services also began to rise, signaling an evolution in user preferences away from basic voice calling and towards more interactive, broadband-enabled data tools and applications. As early as 1997, the FCC observed that wireless data applications were poised to become an integral part of the industry.²⁶ By December 2000, annual revenue derived from mobile data was \$211 million; by December 2005 it was \$8.5 billion, an increase of almost 6,000 percent.²⁷ Because the FCC had adopted a hands-off approach to the wireless market, and because spectrum was allotted without stifling encumbrances, carriers were able to respond to this shift in consumer preference in a number of ways. They upgraded networks to accommodate the surging demand for mobile data applications,²⁸ adopted more competitive data pricing plans,²⁹ and more finely attuned their strategies to maximize customer satisfaction. As will be discussed in further detail below, these policies continue to influence competition and innovation in the market. Consumers are demanding more of their mobile service and carriers are able to respond quickly and efficiently due to the enforcement of market-based policies by the FCC.

²³ *Wireless Quick Facts*.

²⁴ *Id.*

²⁵ *Id.*

²⁶ See *In re Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, Third Report*, FCC 98-91, 8 (1998) (“3rd CMRS Report”).

²⁷ *Wireless Quick Facts*.

²⁸ 11th CMRS Report at para. 107.

²⁹ *Id.* at para. 95-100.

C. Conclusion: The Adoption and Adherence to Market-Based Spectrum Allocation Policies Has Been a Boon to Consumers, and the Adoption of the Proposed AWS-3 Would Represent a Clear Departure from this Precedent

Two themes emerge from the preceding section. *First*, the FCC has deliberately moved towards a more market-oriented approach to wireless regulation. This has positioned the Commission as a careful policy maker whose policies generally reflect the current state of the wireless market and not some idealized version of it. As discussed above, the FCC has been successful in enacting policies over the past two decades that have fostered competition in the wireless marketplace. These policies were mostly hands-off – spectrum was freed from encumbrances, common carrier regulation for wireless services was deemed unnecessary³⁰ and, most recently, the FCC classified wireless broadband service as an “information service,” a move that was intended to further remove the regulatory hand from the market.³¹ Rather than actively regulate the market by trying to divine the wants and needs of carriers and consumers, the FCC has, for the most part, been a careful observer of the sector and had, until recently, abstained from activist regulation.

Second, this approach to policy making has produced an observable paradigm shift in the wireless market. The typical paradigm of many regulated markets is dominated by the interplay between regulator and regulated entity, relegating the consumer to the sideline to reap whatever welfare gains or suffer any welfare losses that may result. The FCC initially employed a rigid command-and-control regime for spectrum allocation, but as demand for wireless services surged, the FCC appropriately adjusted its approach. In a sense, the traditional paradigm has

³⁰ In 1993, Congress delegated to the FCC the authority to exempt Commercial Mobile Radio Service (CMRS) providers from any Title II common carrier requirements it deemed unnecessary except for nondiscrimination requirements set forth in Sections 201 and 202, and complaint procedures of Section 208. *See* 47 U.S.C. §332 (c)(1).

³¹ *In the Matter of Appropriate Regulatory Treatment for Broadband Access to the Internet Over Wireless Networks*, 22 F.C.C.R. 5901 (2007).

been flipped. Consumer demand is driving innovation and carrier business strategies, and the FCC facilitates continued growth by easing regulation. This paradigm shift created a new framework for the FCC vis-à-vis the wireless market. As the FCC has acknowledged, “current [spectrum] policy affords licensees greater flexibility to decide what services to offer and what technologies to deploy on cellular spectrum, as well as other spectrum used for the provision of CMRS, and allows market forces to play a greater role in determining the number of entrants in each local market for mobile telephone service.”³² However, the proposed AWS-3 rules threaten to undermine and reverse many of the gains that have resulted from this framework.

In light of the preceding overview, the proposed rules for the AWS-3 band represent a clear step backwards by the FCC. Whereas the Commission has consistently championed policy making that “place[s] primary reliance on market forces to stimulate competition, technical innovation, and [the] development of new services for the benefit of consumers,”³³ the imposition of onerous encumbrances on spectrum contradicts a deferral to the market. Indeed, burdening spectrum with rules and requirements is the antithesis of relying on market forces to dictate the best use of a portion of airwaves. As was described in this section, the FCC over the last two decades crafted policies in reaction to the conditions in the wireless market and did not substitute its own policy agenda for the business decisions made by competing firms. However, as the next section will detail, the proposed AWS-3 rules are unnecessary due to the current competitive conditions in the broadband and wireless sectors. If these rules are adopted, the FCC will have reversed course on twenty-five years of policy making. Such a decision will introduce uncertainty into the marketplace and could very well halt consumer welfare gains.

³² 11th CMRS Report at para. 60.

³³ See FCC, *Draft Strategic Plan, 2009-2014*, 6 (as of June 24, 2008), available at <http://www.fcc.gov/omd/strategicplan>.

III. THE PROPOSED “FREE” BROADBAND REQUIREMENT IS UNNECESSARY BECAUSE THE BROADBAND AND WIRELESS SECTORS ARE THRIVING IN THE ABSENCE OF GOVERNMENT INTERVENTION

The “free” broadband rule proposed by the FCC in its AWS-3 auction rules requires the winning bidder to “provide free, two-way broadband Internet service including...data rates of at least 768 kbps downstream using up to 25 percent of the licensee’s network capacity” and to “provide for open devices for its free service.”³⁴ This rule was developed in response to the assertion by M2Z Networks that “broadband services continu[e] to be out of reach for...many Americans.”³⁵ However, as this section will demonstrate, M2Z’s statement is patently false. Over the course of the last few years, the FCC and a variety of public and private institutions have released a mountain of data that confirm the health and robustness of both the broadband and wireless markets. After detailing the high levels of competition and consumer welfare gains in each sector, it will be seen that the proposed “free” broadband rule is unnecessary and would serve only to chill the marketplace and substitute organic innovation with the FCC’s vision for a market guided by regulatory fiat.

A. Robust Intermodal Competition in the Broadband Market Strongly Cautions Against the “Free” Broadband Rule

The FCC is charged with crafting and implementing policies to “encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans.”³⁶ “Advanced telecommunications capability” is defined as “high-speed, switched, broadband telecommunications capability that enables users to originate and receive high quality

³⁴ AWS FNPRM at para. 3.

³⁵ See Comments of M2Z Networks, *In the Matter of Service Rules for Advanced Wireless Services*, WT Docket Nos. 07-195, at p. iii (filed Dec. 14, 2007) (“M2Z Comments”).

³⁶ 47 U.S.C. § 157 nt., sec. (a).

voice, data, graphics, and video telecommunications using any technology.”³⁷ According to the most recent FCC survey of advanced telecommunications services, “broadband in the United States is being deployed in a reasonable and timely fashion.”³⁸ Voluminous data, from the FCC and other sources, confirm this conclusion.

As of June 30, 2007, the FCC reports that there are over 100 million broadband connections in the United States,³⁹ up from 82.8 million by the end of 2006.⁴⁰ Between June 2006 and June 2007, the number of broadband connections increased by 55 percent.⁴¹ To get a sense of how quickly the market is developing and maturing, consider that by June 2000 there were 4.1 million broadband connections.⁴² Over the course of only eight years, the number of broadband connections has increased by 2,360 percent. These numbers correspond to a similarly healthy and increasing penetration rate among U.S. households. According to a recent report by the Pew Internet & American Life project (“Pew”), 55 percent of homes had adopted broadband by April 2008 compared to just 42 percent by March 2006.⁴³ To put this into perspective, Pew has observed that it took wireless 15 years to reach a 50 percent penetration rate in the U.S. while it has taken broadband only nine.⁴⁴ Moreover, broadband is widely available.

³⁷ 47 U.S.C. § 157 (c) (1).

³⁸ See In the Matter of Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, Fifth Report, GN Docket No. 07-45, para. 76 (rel. June 12, 2008) (“706 5th Report”).

³⁹ See FCC, *High-Speed Services for Internet Access: Status as of June 30, 2007*, Table 10 (“FCC 2007 Broadband Stats”).

⁴⁰ *Id.* at 1.

⁴¹ *Id.*

⁴² See FCC, *High-Speed Services for Internet Access: Status as of June 30, 2006*, Table 10.

⁴³ See John B. Horrigan, *Home Broadband Adoption 2008*, Pew Internet & American Life Project, at 2 (July 2008) (“*Home Broadband Adoption 2008*”).

⁴⁴ See John B. Horrigan, *Commentary: U.S. Lags Behind*, Pew Internet & American Life Project, at 1 (Aug. 2007), available at http://www.pewinternet.org/pdfs/Broadband_Commentary.pdf.

The FCC reports that, as of June 2007, “only 0.1 percent of zip codes in the United States reported no high-speed lines, compared to 6.8 percent of zip codes with no reported lines in December 2003. The percent of zip codes reporting four or more providers of high-speed lines also has increased, from 46.3 percent in December 2003 to 88.5 percent in June 2007.”⁴⁵ Based on this data, the FCC concluded that “these figures do provide evidence that broadband deployment is increasing over time.”⁴⁶ Increased ubiquity has been driven by intermodal competition, which provides consumers with a growing universe of options for getting online. Even though cable and DSL still represent the majority of broadband connections, newer access technologies like fiber and mobile wireless are increasing their share of users. For example, the number of fiber-optic broadband connections in the U.S. has risen substantially over the last year as companies like Verizon and AT&T upgrade their networks.⁴⁷ Similarly, as discussed in the next section, wireless broadband is also being used by more and more consumers.

Availability of broadband, however, is only part of the equation; adoption is the other. There is a growing consensus that adoption of broadband is based on factors beyond the control of service providers, like the lack of a computer or low demand among certain segments of the population. For example, a Consumer Electronics Association report recently found that the number one reason for not subscribing to broadband was the lack of a home computer, not lack of available broadband.⁴⁸ One Economy, a nonprofit dedicated to increasing broadband adoption among low-income users, recently agreed with Pew that flat adoption rates for broadband among

⁴⁵ 706 5th Report at para. 35.

⁴⁶ *Id.*

⁴⁷ According to the FCC, 2 percent of all broadband connections are fiber-based. *Id.* at para. 34.

⁴⁸ See *Broadband in America: Access, Use and Outlooks*, Consumer Electronics Association, at 6, July 2007, available at http://www.ce.org/PDF/CEA_Broadband_America.pdf.

low-income users is due mostly to a lack of demand for broadband.⁴⁹ The FCC should not mistake lack of adoption for lack of availability. Doing so overlooks the tremendous gains of the broadband market over the last few years. Intermodal competition has driven network development and deployment to nearly every corner of the country, and driven down prices.⁵⁰ The FCC has a number of policy tools at its disposal to spur deployment, demand, and adoption of broadband among the unserved.⁵¹ Encumbering valuable spectrum with a needless “free” broadband requirement ought not to be one of them.

B. The Emergence of Wireless Broadband Has Been Facilitated by the FCC’s Deregulatory Approach and Market-Based Spectrum Policies; Adopting the “Free” Broadband Rule Would Chill Competition, Halt Organic Deployment and Lessen Consumer Welfare Gains

The FCC recently observed that “U.S. consumers continue to reap significant benefits – including low prices, new technologies, improved service quality, and choice among providers – from competition in the [wireless] marketplace” and that “there is effective competition in the [wireless] market.”⁵² As described above, the FCC has made additional spectrum available over the years to facilitate continued competition by inviting new firms to enter the market and by providing network owners with flexibility to choose how best to use their swaths of airwaves. As a result, both availability and adoption of wireless services have exploded.

⁴⁹ See William G. Korver, *Broadband Adoption and Not Availability is Key Challenge, Says One Economy*, July 31, 2008, BROADBANDCENSUS.COM, available at <http://broadbandcensus.com/blog/?p=225>; *Home Broadband Adoption 2008* at 12-14 (noting that “one-third (33%) of non-internet users say they are simply not interested in the internet” whereas “just 7% say it is too expensive.”).

⁵⁰ Pew found that broadband prices have decreased by 4 percent since 2005. *Home Broadband Adoption 2008* at 7.

⁵¹ The most obvious vehicle for such reforms is careful Universal Service Fund (USF) reform. USF reform has the potential to create incentives for build out to unserved areas of the country. The Federal-State Joint Board for USF reform has recommended that the FCC adopt reforms that fund broadband and advanced wireless deployment to unserved parts of the country. See *Federal-State Joint Board on Universal Service*, Recommended Decision, FCC 07J-4, WC Docket No. 05-337, CC Docket No. 96-45, at para. 4 (rel. Nov. 20, 2007).

⁵² See *In re Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, Twelfth Report*, FCC 07-71, para. 1 (2008) (“12th CMRS Report”).

According to the most recent data there are over 255 million wireless subscribers in the United States.⁵³ The penetration rate is currently around 84 percent⁵⁴ and coverage is nationwide. The FCC has found that approximately 99.8 percent of the total U.S. population has one or more different mobile operators in the census blocks in which they live.⁵⁵ Similarly, 95 percent of the population lives in areas with at least three mobile operators competing to offer service, and more than half of the population lives in areas with at least five competing operators.⁵⁶ Given the wide availability and adoption of wireless services, it is not surprising that consumers have shown a clear preference for mobile telephony over traditional telephony. A telling statistic is that the number of landline telephones has decreased each year since 2002⁵⁷ while the number of households that are mobile-only has risen to nearly 16 percent.⁵⁸

Wireless networks are also being used to provide more advanced data applications and services. Consumer interest in these types of services was piqued by the introduction of text messaging and the wider availability of wire-based broadband access. As a result, demand for advanced wireless services has increased exponentially since the turn of the century. For example, consumers sent about 14 million text messages in December 2000; by December 2007 that number was 48 *billion*.⁵⁹ Text messaging has evolved into picture messaging and multimedia messaging, both of which are increasingly popular as phones become more advanced. Many phones now come equipped with a digital camera, which facilitates the

⁵³ *Wireless Quick Facts*.

⁵⁴ Up from just 13 percent in 1995. *Id.*

⁵⁵ *12th CMRS Report* at p. 5.

⁵⁶ *Id.*

⁵⁷ See FCC, *Local Telephone Competition: as of June 30, 2007*, Table 1.

⁵⁸ See Stephen J. Blumberg, Ph.D., and Julian V. Luke, *Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, July-December 2007*, Center for Disease Control (rel. May 13, 2008).

⁵⁹ *Wireless Quick Facts*.

transmission of photos to other users. The number of pictures and other multimedia messages sent wirelessly among mobile users doubled between 2005 and 2006.⁶⁰ According to Pew, some 62 percent of Americans have participated in this new mobile data culture.⁶¹ As evidence of how engrained mobile phones and mobile data have become for most Americans, Pew found that consumers “are now most likely to say the cell phone would be most difficult to do without, followed by the internet, TV, and landline telephone.”⁶²

Mobile broadband is the next stage in the evolution of the wireless market. And this segment of the market is blossoming due to vigorous competition among carriers and increased consumer demand. Currently 40 million wireless customers actively use the Internet on their phones.⁶³ In total, there are 95 million consumers who pay for mobile Internet subscriptions in the U.S.⁶⁴ Carriers are responding to booming demand by offering customers a variety of data plans and more advanced phones. Data plan options include the increasingly popular “all you can eat” plan, which charges a flat rate for unlimited data, a fixed-fee limit plan, and a pay-as-you-go plan.⁶⁵ Consumers are also purchasing larger numbers of more advanced “Smartphones,” devices that can access the Internet, stream video, send and receive e-mail, take pictures, and otherwise act as a portable computer. According to the FCC, the number of mobile phones capable of accessing the Internet at broadband-level speeds increased from zero in 2003 to well over 35 million by 2007.⁶⁶ Sales of Smartphones have increased 270 percent over the last year.⁶⁷

⁶⁰ 12th CMRS Report at p. 7.

⁶¹ See John B. Horrigan, *Mobile Access to Data and Information*, Pew Internet & American Life Project, at 1 (March 2008) (“Pew Mobile Data 2008”).

⁶² *Id.*

⁶³ See Nielsen Mobile, *Critical Mass: The Worldwide State of the Mobile Web*, at p. 3 (July 2008).

⁶⁴ *Id.*

⁶⁵ *Id.* at 4.

⁶⁶ 706 5th Report at para. 21.

In order to accommodate the boom in demand for mobile broadband, carriers are actively upgrading their networks, rolling out next-generation infrastructure, and releasing plans for the next iteration in network innovation. All of these developments have been facilitated by a hands-off FCC that has allowed each carrier considerable leeway in developing and implementing plans for their networks. For example, T-Mobile, AT&T, and Verizon are in the process of deploying third-generation (3G) networks nationwide.⁶⁸ 3G networks have the capability to deliver wireline-level broadband speeds to wireless phones. These and other companies are already planning for the deployment of the next, fourth-generation of networks (4G). Thus far, there are two competing standards – WiMAX and Long-term Evolution (LTE).⁶⁹ AT&T and Verizon, for example, have already opted for LTE and will begin deploying this technology beginning later this year.⁷⁰ Sprint Nextel, along with a consortium of cable and software companies, recently announced a joint venture to deploy a nationwide WiMAX network by 2011.⁷¹ Both 4G networks promise much faster upload and download speeds.

⁶⁷ See Press Release, J.D. Power and Associates, *Rising Popularity of Smartphone Devices Drives Higher Wireless Mobile Phone Prices* (rel. May 29, 2008) (finding that “sales of Smartphone devices have increased considerably over the past year to 6.3 percent from 1.7 percent in overall market share at the beginning of 2007”), available at <http://www.jdpower.com/corporate/news/releases/pressrelease.aspx?ID=2008059>.

⁶⁸ See, e.g., *AT&T Increases 3G Wireless Network Speeds*, June 16, 2008, BROADBANDINFO.COM, available at <http://www.broadbandinfo.com/news/att-increases-3g-wireless-network-speeds-214.html>; Marguerite Reardon, *T-Mobile Launches 3G Network in NY*, May 5, 2008, CNET NEWS.COM, available at http://news.cnet.com/8301-10784_3-9936006-7.html.

⁶⁹ See *Culture Clash*, July 19, 2008, THE ECONOMIST (noting that “both 4G technologies promise wireless nirvana: fast, ubiquitous broadband. Once radio chips are cheap enough, they will crop up not just in handsets and laptops, but in devices such as digital cameras and electricity meters, which are unconnected today.”).

⁷⁰ See W. David Gardner, *AT&T Plans Fast 4G Rollout*, April 4, 2008, INFORMATION WEEK, available at <http://www.informationweek.com/news/mobility/3G/showArticle.jhtml?articleID=207001878>; Press Release, Verizon Wireless, *Verizon Selects LTE as 4G Wireless Broadband Direction*, Nov. 29, 2007, available at <http://news.vzw.com/news/2007/11/pr2007-11-29.html>.

⁷¹ See Cliff Edwards, *Putting WiMAX on the Fast Track*, May 7, 2008, BUSINESS WEEK, available at http://www.businessweek.com/technology/content/may2008/tc2008057_480955.htm.

C. Conclusion: The Proposed “Free” Broadband Rule is Unnecessary in Light of the High Levels of Competition and Consumer Welfare Gains in the Broadband and Wireless Sectors

Both the broadband and wireless sectors have thrived under the FCC’s hands-off regulatory approach. The FCC had, until recently, explicitly removed regulation from each sector in order to allow organic market forces and robust competition to guide the market. In the broadband sector, the FCC has classified almost every broadband transmission technology as an “information service,” which removes them from the Commission’s primary regulatory purview. Similarly, in the wireless sector the FCC has classified wireless broadband as an “information service” and had implemented a market-oriented spectrum allocation policy that largely deferred to carriers regarding spectrum use decisions. Unfortunately, the “free” broadband encumbrance included in the proposed AWS-3 rules threatens to halt the enormous amounts of innovation and competition currently observed in both the broadband and wireless sectors.

As the preceding section made clear, there is an obvious relationship between consumer welfare gains and deregulation in both the broadband and wireless sectors. Networks owners have responded to the regulatory certainty of this approach by investing billions in their networks and by basing their business decisions on consumer demand, not what the FCC thinks the marketplace requires. Adopting the “free” broadband rule would nullify the gains in both sectors, inject regulatory uncertainty, replace bottom-up organic innovation with top-down government-mandated innovation, and ultimately deny consumers access to cutting-edge services.

IV. SPECTRUM ENCUMBRANCES LIKE THE “FREE” BROADBAND RULE ARE HARMFUL TO CONSUMERS AND THE MARKETPLACE

Even though the FCC retains significant control over spectrum and often auctions swaths of it off that are burdened with very narrow sets of rules,⁷² the Commission’s approach to

⁷² *Wireless Craze* at 398-399.

spectrum allocation, as previously discussed, has evolved as the wireless market has evolved. The rules that are attached to each piece of spectrum often reflect the current state of the wireless marketplace. Prescriptive encumbrances, or spectrum rules that unnecessarily limit use of the airwaves, have been largely eschewed by regulators in the recent past, especially those that are not reflective of the current marketplace. In light of the previous section, the “free” broadband rule included in the proposed AWS-3 rules represents a prescriptive encumbrance that is unnecessary when viewed against the high levels of competition and consumer welfare gains in the broadband and wireless sectors. As this section will detail, these types of prescriptive encumbrances have a number of additional negative impacts – they decrease the value of the spectrum, slow innovation, and, in the case of the AWS-3 rules, limit the pool of potential bidders by endorsing a specific (and failed) business model and raise the possibility of harmful interference for licensees in adjacent bands..

A. Encumbrances Like Those Found in the Proposed AWS-3 Rules Decrease the Value of Spectrum

Congress allowed the FCC to begin auctioning spectrum in 1993. The underlying rationale was two-fold. First, Congress and the FCC recognized that its original system of spectrum allocation – comparative hearings and then lotteries – was inadequate for the dynamic wireless marketplace.⁷³ Second, given that spectrum is a scarce commodity, Congress and the FCC embraced a free market approach to its sale. Regulators understood that principles of supply and demand would drive competing firms to optimize the price of spectrum in a more efficient way than the government ever could. Auctions proved successful and popular from the very beginning. By 1996, the government had raised \$20 billion from spectrum auctions.⁷⁴ In the

⁷³ See FCC, *About Auctions*, available at http://wireless.fcc.gov/auctions/default.htm?job=about_auctions.

⁷⁴ *Wireless Craze* at 399-400.

most recent auction for 700 MHz spectrum, firms paid nearly \$20 billion for licenses in this “beachfront” band.⁷⁵

Recent studies, however, have found that certain prescriptive conditions placed on portions of spectrum, like the “open access” provisions attached to the “C” block in the 700 MHz auction, decrease the value and thus the auction price of that portion of the airwaves. One recent study found that the imposition of “open access” rules on the “C” block cost taxpayers upwards of \$3.1 billion in lost revenues.⁷⁶ Moreover, this study predicted that encumbering all swathes of spectrum with these types of “open access” requirements would “suppress wireless infrastructure investment by \$50 billion over the next decade, sharply reduce the profitability of wireless network services by 32%, and harm consumers.”⁷⁷ Applying this same analytical framework to the proposed AWS-3 rules, a follow-up study found that these encumbrances will likely decrease the auction price of the spectrum by a similar amount.⁷⁸

The FCC is required to act in the public interest. Spectrum auctions have satisfied this requirement by auctioning spectrum based on a welfare-enhancing, free market system that is driven by supply and demand. When the FCC explicitly acts to devalue this public commodity by encumbering spectrum with rules and requirements that drive down its sale price, the FCC is abrogating its responsibility to act in the public interest. In this instance, the FCC is trying to

⁷⁵ See Bryan Gardiner, *In Spectrum Auction, Winners are AT&T, Verizon and Openness*, March 20, 2008, WIRED EPICENTER BLOG, available at <http://blog.wired.com/business/2008/03/fcc-releases-70.html>.

⁷⁶ See George Ford, Thomas Koutsky & Lawrence Spiwak, *Using Auction Results to Forecast the Impact of Wireless Carterfone Regulation on Wireless Networks*, at p. 3, PHOENIX CENTER POLICY BULLETIN No. 20 (2nd Edition) (rel. May 2008), available at <http://www.phoenixcenter.org/PolicyBulletin/PCPB20Final2ndEdition.pdf>.

⁷⁷ *Id.* at 1.

⁷⁸ See George Ford, *Calculating the Value of Unencumbered AWS-III Spectrum*, at p. 3, PHOENIX CENTER PERSPECTIVES 08-01 (rel. June 25, 2008) (estimating the cost of unencumbered AWS-III spectrum would be in the “upper \$2 billion range) and that, even though no prediction was offered regarding how much the encumbrances might devalue the spectrum, “I see no reason to believe such a substantial discount would not appear in the AWS-III auction given the proposed conditions.”), available at <http://www.phoenix-center.org/perspectives/Perspective08-01Final.pdf>.

mask its top-down imposition of an unnecessary “free” broadband requirement beneath the guise of upholding its desire to achieve ubiquitous broadband. However, as has been previously detailed, organic market forces have already brought broadband to nearly every corner of the country. Burdening a valuable piece of spectrum with a “free” broadband rule is unnecessary, inefficient, and represents reckless policy making.

B. Encumbrances Slow Innovation and Produce Measurable Consumer Welfare Losses

The FCC, as previously discussed, initially imposed a rigid command-and-control regime for the allotment of spectrum. These and other stifling policies slowed innovation in the early days of the wireless market and led to measurable consumer welfare losses. Indeed, according to one study, this restrictive regulatory approach resulted in annual consumer welfare losses of \$50 billion due to the delay in the deployment of more advanced networks and services.⁷⁹ Once the FCC shifted to an auction system and adopted more market-based policies for the wireless market, the sector flourished.

Encumbrances by their definition limit the rights one has in the property that is burdened by the requirements. As such, prescriptive wireless encumbrances, like the “free” broadband rule in the proposed AWS-3 rules, substitute the wisdom and experience of network engineers for the judgment of the FCC regarding how to use spectrum. Oftentimes, the result is a suspension of organic innovation. Moreover, the FCC sometimes errs in crafting policies that it thinks are reflective of consumer demand or misses opportunities to facilitate competition and innovation. For example, cellular technology was conceived in the 1940s but it was not until the early 1980s that the FCC was satisfied that the technology would benefit consumers and began licensing for

⁷⁹ See Jerry A. Hausman, *Valuing the Effect of Regulation on New Services in Telecommunications*, in BROOKINGS PAPERS ON ECONOMIC ACTIVITY: MICROECONOMICS 1997 1, 35 (Martin Neil Bailly, et al. eds 1998).

its use. It is estimated that this delay cost the U.S. economy about \$86 billion (measured in 1990 dollars).⁸⁰ Similarly, the FCC opened a proceeding in the 1960s to study the feasibility of reallocating spectrum for cellular use⁸¹ but did not authorize testing of the technology until the late 1970s.⁸²

In other instances, even when the FCC has identified a policy goal that it wishes to achieve via regulatory fiat, the machinery of policy making is often too slow to keep pace with the speed of the market. A recent example of this was the move towards “openness” by wireless carriers. In response to calls by the FCC for carriers to open their networks and allow customers to use their choice of phones on any network,⁸³ a number of handset manufacturers, application providers, and wireless carriers came together to form the Open Handset Alliance to “accelerate innovation in mobile and offer consumers a richer, less expensive, and better mobile experience.”⁸⁴ The first mass-market handset that contains the Android open platform will be released by T-Mobile later this year.⁸⁵ Other major carriers unaffiliated with this group have also moved towards more open networks. For example, even though Verizon Wireless was the winning bidder for the “open access” block of spectrum in the recent 700 MHz auction, it

⁸⁰ See Jeffery H. Rohlf et al., *Estimate of Loss to the United States Caused by the FCC’s Delay in Licensing Cellular Communications*, NATIONAL ECONOMIC RESEARCH ASSOCIATES (rel. Nov. 8, 1991).

⁸¹ See 47 CFR Parts 2, 18, 21, 73, 74, 89, 91 and 93 (1968), *Use of Certain Frequency Band and Operations in Land Mobile Service*.

⁸² In 1977, the FCC considered an application “to construct and operate the first developmental Mobile Radio Telecommunications system using Cellular concepts.” The FCC was enthusiastic about this petition, specifically, and more generally about the promise of wireless telephony as a way to “achieve [its] objective of a nationwide, high capacity radiotelephone service.” See *Ill. Bell Tel. Co.*, 63 F.C.C.2d 655 (1977).

⁸³ “Open access” conditions were imposed on the C block of spectrum in the most recent 700 MHz auction. *Supra*.

⁸⁴ See Open Handset Alliance, Overview, available at http://www.openhandsetalliance.com/oha_overview.html.

⁸⁵ See Olga Kharif, *T-Mobile USA: Android Coming in Q4*, May 5, 2008, BUSINESS WEEK, available at http://www.businessweek.com/the_thread/techbeat/archives/2008/05/t-mobile_usa_an.html.

announced that it would open its network before the auction closed.⁸⁶ AT&T announced its decision to open its network in late 2007.⁸⁷

Similarly, the “free” broadband requirement calls for the winning bidder to provide service that would be inferior to what is currently offered by a variety of carriers. The rule calls for the spectrum owner to provide service of at least 768 kbps to 95 percent of the population by the end of its ten-year license term.⁸⁸ Current 3G offerings by T-Mobile, AT&T, and Verizon Wireless, among others, already top these speeds and have nationwide coverage.⁸⁹ Moreover, within the next ten years, most carriers will have upgraded to 4G networks using either WiMAX or LTE (or an as-yet developed innovation), which will be capable of delivering mobile broadband speeds in the multi-megabit per second range.

It is plain to see that government-imposed innovation is no substitute for the advancements produced by organic market forces. A hands-off regulatory approach by the FCC has spurred robust competition, fostered enormous innovation, and created vast consumer welfare gains. Adopting the proposed AWS-3 rules would chill the marketplace, slow innovation, and lead to consumer welfare losses tantamount to those suffered by consumers in the 1980s who were deprived of advances in wireless service because the FCC’s approach to the sector was too rigid.

C. The “Free” Broadband Encumbrance Included in the Proposed AWS-3 Rules Endorses a Failed Business Model

The “free” broadband rule is based on the business model advanced by M2Z Networks. In the past, the FCC has based auction rules for certain slices of spectrum on particular business

⁸⁶ See Marguerite Reardon, *Verizon Wireless Opens its Network*, Mar. 19, 2008, CNET NEWS.COM.

⁸⁷ See Leslie Cauley, *AT&T Flings Cellphone Network Wide Open*, Dec. 5, 2007, USA TODAY.

⁸⁸ AWS FNPRM at para. 3.

⁸⁹ Or will soon. As mentioned above, T-Mobile will deploy its 3G service nationwide over the course of the next year.

models. More often than not, these efforts have failed.⁹⁰ Moreover, the “free” broadband rule is premised on the false assumption that broadband service can be supplied at no cost to certain segments of consumers.⁹¹ Over the years, a number of municipalities have attempted to provide “free” broadband to residents. More often than not, these efforts have failed.

Over the last several years, hundreds of municipalities have attempted to offer free or heavily discounted broadband to residents, usually via Wi-Fi. Many of these efforts have floundered or outright failed for two reasons. First, cities and network operators were unable to develop a viable business model that would allow for the provision of free broadband while also providing the network owner with the opportunity to turn a profit. Operators quickly realized that the chances of recouping upfront investments were limited if they did not have large, institutional anchor tenants to insure against low levels of consumer demand.⁹² As such, many network operators are currently reevaluating their business models and considering a number of alternative strategies, including subsidizing free service through location-based advertising.

Second, in most cases municipalities decided to enter the broadband market in the absence of a clear market failure. Such a situation is a critical condition precedent for government intervention in the broadband market.⁹³ Otherwise, when a municipality enters a market where consumers are already well-served by their current network providers, demand for

⁹⁰ CTIA, in its comments to this proceeding, does a good job of identifying instances where the FCC has failed in basing auction rules on a specific business plan. According to its filing, these instances include rules for the auction of the D Block of the 700 MHz band, MVDDS, 1070-1675 MHz, and DBS Orbital Slot at 61.5. See Comment of CTIA – The Wireless Association, at pp. 4-6, *In the Matter of Service Rules for Advanced Wireless Services*, WT Docket Nos. 07-195 and 04-356, Further Notice of Proposed Rulemaking, FCC 08-158 (submitted July 25, 2008).

⁹¹ For an economic explanation of why “free” broadband often isn’t free see George Ford, *Valuing the AWS-3 Spectrum: A Response to Comments*, at pp. 2-4, PHOENIX CENTER PERSPECTIVES 08-02 (rel. July 21, 2008) (commenting that “simple economics tells us that free broadband may be as socially harmful as monopoly broadband”), available at <http://www.phoenix-center.org/perspectives/Perspective08-02Final.pdf>.

⁹² *Id.*

⁹³ See Michael J. Santorelli, *Rationalizing the Municipal Broadband Debate*, 3 ISJLP 43, 76-78 (2007).

a public Wi-Fi system will usually be very low. Thus, the “free” broadband requirement included in the proposed AWS-3 rules would likely be as unsuccessful as most municipal broadband networks because there is little evidence of market failure in the broadband and wireless markets. Moreover, faced with robust competition and with little incentive to innovate, the winning bidder of this portion of spectrum might find it very difficult to recoup its investments. In this instance, the network owner might be forced to go out of business, leaving a valuable swath of spectrum fallow. This situation would be devastating to consumers and carriers.

D. The Encumbrances Included in the Proposed Rules Raise the Possibility of Harmful Interference for Licensees in Adjacent Spectrum Bands

In addition to endorsing a failed business plan, the proposed set of rules also raise the possibility of harmful interference for licensees in bands adjacent to the AWS-3 band. A large number of parties that have submitted comments in this proceeding, including network owners, equipment makers and engineers, have identified a wide range of plausible and practical concerns regarding the prospect that services provided in the AWS-3 band, as per the current set of proposed rules, would cause interference in neighboring bands of spectrum, particularly the AWS-1 band.⁹⁴ Given how valuable spectrum is, such concerns must be carefully considered.

Spectrum in the AWS-1 band, which was auctioned in 2006,⁹⁵ was hailed as being robust enough to “enable a broader range of broadband services, including Internet access at faster

⁹⁴ See, e.g., *Comments of T-Mobile USA Inc.*, WT Docket No. 07-195, at 7 (filed July 25, 2008); *Comments of CTIA – The Wireless Association*, WT Docket No. 07-195, at 29 (filed July 25, 2008); *Reply Comments of AT&T*, WT Docket No. 07-195, at 1-3 (filed Jan. 14, 2008); *Comments of Verizon Wireless*, WT Docket No. 07-195, at 16 (filed Dec. 14, 2007); *Comments of Motorola*, WT Docket No. 07-195, at 3-8 (filed Dec. 14, 2007); *Comments of MetroPCS*, WT Docket No. 07-195, at 6-7 (filed Dec. 14, 2007).

⁹⁵ The AWS-1 auction grossed nearly \$14 billion. See *Statement of Chairman Kevin J. Martin on the Conclusion of Advanced Wireless Services Auction*, (Sept. 18, 2006), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-267473A1.pdf.

speeds.”⁹⁶ Carriers have since invested billions of dollars in building out networks to take advantage of this spectrum and offer more advanced wireless broadband services. Even the possibility of interference would slow deployment efforts in this and other bands of spectrum. Since the Commission is bound by statute to protect licensees against such interference,⁹⁷ the FCC ought to consult with carriers operating in adjacent bands, engineers, and other experts to carefully craft a set of technical rules that allow current spectrum owners to optimize their portion of the airwaves without fear of having their efforts nullified by the prescriptive encumbrances attached to other slices of spectrum. Otherwise the Commission risks halting the organic deployment of advanced services in one band in favor of pursuing an untenable business model in another.

* * * * *

Unnecessarily tinkering with valuable spectrum increases the risk that the spectrum will not be put to optimal use.⁹⁸ As was described in this section, prescriptive encumbrances often lead to measurable consumer welfare losses by decreasing the value of spectrum, slowing innovation, and substituting the FCC’s judgment for the wisdom and experience of network owners and engineers. More generally, reverting back to a command-and-control regime increases the likelihood that consumers will be deprived of next-generation networks, more robust broadband services, and more converged technologies. As such, the FCC should reject the encumbrances included in the proposed AWS-3 rules lest it risk disturbing fruitful organic innovation across the wireless and broadband markets.

⁹⁶ See *Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands*, Report and Order, 18 FCC Rcd 25162, para. 44 (Nov. 25, 2003).

⁹⁷ 47 U.S.C. § 303(f).

⁹⁸ As economist Oz Shy has noted, “The goal of the regulator in allocating spectrum should be to award licenses to the firms best able to turn the spectrum into valuable services for consumers.” See OZ SHY, *THE ECONOMICS OF NETWORK INDUSTRIES* 149 (Cambridge 2001).

V. CONCLUSION

Innovation by government fiat simply does not work, especially when there is competition in the relevant market. Consumer welfare gains – innovation, choice, low prices, etc. – are optimized in competitive markets. Such is evident in the broadband and wireless markets. Each sector has responded favorably to a deregulatory approach by the FCC. Thus policies and requirements like those included in the proposed AWS-3 rules are unnecessary. Accordingly, we respectfully call on the FCC to not adopt the proposed AWS-3 rules and to defer to the marketplace for the further development and deployment of innovative, next-generation broadband and wireless services to consumers across the country.

Respectfully submitted,

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